

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claim 1 (currently amended) A substrate retainer, comprising:

a plurality of retainer body bodies, configured to removably engage ~~a portion of a back side of a substrate~~ having a back side, wherein each retainer body engages a corresponding inner portion of the back side and the plurality of retainer bodies collectively engage less than the entire back side; and

a flexure coupled to one of the retainer body bodies, configured to restrict one or more degrees of movement of the substrate with respect to the substrate retainer.

Claim 2 (currently amended) The substrate retainer of Claim 1, wherein one of the retainer body bodies removably engages the back side of the substrate through vacuum control.

Claim 3 (currently amended) The substrate retainer of Claim 2, wherein one of the retainer body bodies includes a contact surface, and an aperture extending through a portion of the contact surface to allow activation and deactivation of a vacuum.

Claim 4 (withdrawn) The substrate retainer of Claim 1, wherein the retainer body removably engages the portion of the back side of the substrate through a coupling method selected from electrostatic force, VanderWaals force, magnetic forces and capillary attraction.

Claim 5 (currently amended) The substrate retainer of Claim 1, wherein one of the retainer body bodies includes a contact surface to mate with ~~the portion of the back side of the substrate~~, and the contact surface is faced with a ~~wear-resistant~~ wear-resistant material.

Claim 6 (currently amended) The substrate retainer of Claim 1, wherein the flexure is configured to resist ~~in-plane~~ in-plane lateral movement, and allows ~~out-of-plane~~ out-of-plane movement.

Claim 7 (currently amended) The substrate retainer of Claim 6 wherein the ~~in-plane~~ in-plane lateral movement restricted by the flexure is movement in at least a selected one of a X, a Y and a θ direction, and the ~~out-of-plane~~ out-of-plane movement allowed by the flexure includes a Z direction.

Claim 8 (original) The substrate retainer of Claim 1, wherein the flexure material is a selected one of steel, aluminum, glass, quartz, synthetic diamond, and sapphire.

Claim 9 (original) The substrate retainer of Claim 1, further comprising an actuator configured to controllably urge the flexure and the retainer body in an upward direction to facilitate chucking and dechucking of the substrate.

Claim 10 (currently amended) The substrate retainer of Claim 9, wherein the actuator controls the coupling of the retainer body to ~~the portion of~~ the back side of the substrate.

Claim 11 (currently amended) A substrate confinement apparatus, comprising:
a global confinement system that causes a substrate to substantially remain in one plane; and

one or more substrate retainers, at least one of which ~~including~~ including:
a plurality of retainer body bodies, configured to removably engage a portion of a back side of a substrate having a back side, wherein each retainer body engages a corresponding inner portion of the back side and the plurality of retainer bodies collectively engage less than the entire back side; and

a flexure coupled to one of the retainer body bodies and configured to restrict one or more degrees of movement of the substrate with respect to the substrate retainer.

Claim 12 (original) The substrate confinement apparatus of Claim 11, wherein three or more substrate retainers are used and equilaterally spaced from each other.

Claim 13 (currently amended) The substrate confinement apparatus of Claim 11, wherein one of the retainer body bodies removably engages ~~the portion of the back~~ side of the substrate through vacuum control.

Claim 14 (currently amended) The substrate confinement apparatus of Claim 11, wherein one of the retainer body bodies includes a contact surface, and an aperture extending through a portion of the contact surface to allow activation and deactivation of a vacuum.

Claim 15 (withdrawn) The substrate confinement apparatus of Claim 11, wherein the retainer body removably engages the portion of the back side of substrate through a coupling method selected from electrostatic force, VanderWaals force, magnetic forces and capillary attraction.

Claim 16 (currently amended) The substrate confinement apparatus of Claim 11, wherein one of the retainer body bodies includes a contact surface to engage the ~~portion of the back side of the substrate~~, and the contact surface is faced with a ~~wear resistant~~ wear-resistant material.

Claim 17 (currently amended) The substrate confinement apparatus of Claim 11, wherein the flexure is configured to resist ~~in-plane~~ in-plane lateral movement, and ~~allows out-of-plane~~ out-of-plane movement.

Claim 18 (currently amended) The substrate confinement apparatus of Claim 17 wherein the in-plane lateral movement restricted by the flexure is movement in at least a selected one of a X, a Y and a θ direction, and the ~~out-of-plane~~ out-of-plane movement allowed by the flexure is a Z direction.

Claim 19 (currently amended) The substrate confinement apparatus of Claim 17, wherein the global confinement apparatus maintains the substrate generally in one plane and the one ~~or more~~ of the substrate retainers ~~allow~~ allows for independent local ~~out-of-plane~~ out-of-plane movement of the substrate.

Claim 20 (original) The substrate confinement apparatus of Claim 11, wherein the flexure material is a selected one of steel, aluminum, glass, quartz, synthetic diamond, and sapphire.

Claim 21 (currently amended) The substrate confinement apparatus of Claim 11, further comprising an actuator configured to controllably urge one of the substrate ~~retainer~~ retainers in an upward direction to facilitate loading and unloading of the substrate.

Claim 22 (currently amended) The substrate confinement apparatus of Claim 11, wherein the global confinement system includes a plurality ~~if of~~ vacuum ports and air jets, and a pressure control to maintain the substrate in substantially one plane.

Claim 23 (currently amended) A substrate confinement method, comprising:
providing a substrate having process side and a back side;
providing a substrate confinement apparatus having ~~at least one~~ or more substrate ~~retainer~~ retainers, ~~each at least one of the~~ each at least one of the substrate ~~retainer~~ retainers having including a plurality of ~~retainer body~~ retainer bodies configured to removably engage ~~a portion of a back side of a substrate~~ having a back side, wherein each retainer body engages a corresponding inner portion of the back side and the plurality of retainer bodies collectively engage less than the entire back side, and a flexure coupled to one of the

retainer ~~body~~ bodies and configured to restrict one or more degrees of movement of the substrate with respect to the substrate retainer;

positioning the substrate in the substrate confinement apparatus;

urging one of the substrate ~~retainer~~ retainers toward ~~the portion of~~ the back side of the substrate; and

coupling a contact surface of one of the retainer ~~body~~ bodies to ~~the portion of~~ the back side of the substrate; and

activating a global confinement ~~system~~; and system.

~~removing the actuator from the substrate retainer.~~

Claim 24 (currently amended) The substrate confinement method of Claim 23, further comprising:

processing the substrate; and

decoupling the substrate retainer from ~~the portion of~~ the back side of the substrate.

Claim 25 (currently amended) The substrate confinement method of Claim 23, wherein urging one of the substrate ~~retainer~~ retainers toward ~~the portion of~~ the back side of the substrate includes providing an actuator and raising the actuator to engage the flexure.

Claim 26 (currently amended) The substrate confinement method of Claim 23, wherein coupling the contact surface of one of the retainer bodies to ~~the portion of~~ the back side of the substrate includes supplying a vacuum to the substrate retainer body.

Claim 27 (new) The substrate confinement method of Claim 25, further comprising:
removing the actuator from the flexure.